



PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:

Brian J. Windsor *et al.*

Serial No.: 10/531,744

Filed: April 18, 2005

For: METHODS AND COMPOSITIONS FOR
INCREASING THE EFFICACY OF
BIOLOGICALLY-ACTIVE
INGREDIENTS

Group Art Unit: Unknown

Examiner: Unknown

Atty. Dkt. No.: TEXG:010US

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INFORMATION DISCLOSURE STATEMENT

MS AMENDMENT

Commissioner for Patents

P.O. Box 1450

Alexandria, Virginia 22313-1450

Sir:

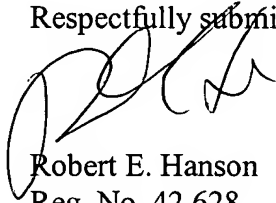
In compliance with the duty of disclosure under 37 C.F.R. § 1.56, it is respectfully requested that this Information Disclosure Statement be entered and the documents listed on attached Form PTO-1449 be considered by the Examiner and made of record. Copies of the listed documents required by 37 C.F.R. § 1.98(a)(2) are enclosed for the convenience of the Examiner.

In accordance with 37 C.F.R §§ 1.97(g), (h), this Information Disclosure Statement is not to be construed as a representation that a search has been made, and is not to be construed to be an admission that the information cited is, or is considered to be, material to patentability as defined in 37 C.F.R. § 1.56(b).

The present Information Disclosure Statement is being filed prior to the receipt of a first Official Action reflecting an examination on the merits, and hence is believed to be timely filed in accordance with 37 C.F.R § 1.97(b). No fees are believed to be due in connection with the filing of this Information Disclosure Statement, however, should any fees under 37 C.F.R. §§ 1.16 to 1.21 be deemed necessary for any reason relating to these materials, the Commissioner is authorized to deduct the appropriate fees from Fulbright & Jaworski Deposit Account No.: 50-1212/TEXG:010US.

Applicants respectfully request that the listed documents be made of record in the present case.

Respectfully submitted,



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Attorney for Applicants

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Date: January 23, 2006



Form PTO-1449 (modified)

List of Patents and Publications for Applicant's

INFORMATION DISCLOSURE STATEMENT

(Use several sheets if necessary)

Atty. Docket No.
TEXG:010USSerial No.
10/531,744Applicant
Brian J. Windsor *et al.*Filing Date:
April 18, 2005Group:
UnknownU.S. Patent Documents
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U.S. Patent Documents

Exam. Init.	Ref. Des.	Document Number	Date	Name	Class	Sub Class	Filing Date of App.
	A1	09/261,825		Windsor <i>et al.</i>			03/03/99
	A2	10/047,251		Windsor <i>et al.</i>			01/14/02
	A3	5,498,533	03/1996	Poovaiah <i>et al.</i>	435	468	07/30/93
	A4	6,180,604	01/30/01	Fraser <i>et al.</i>	514	12	08/20/97
	A5	6,448,472	09/2002	Thomas <i>et al.</i>	278	800	

Foreign Patent Documents

Exam. Init.	Ref. Des.	Document Number	Date	Country	Class	Sub Class	Translation Yes/No
	B1	DD 236944-A	06/1986	GERMANY			Abstract
	B2	WO 00/18886	4/06/00	WIPO			English
	B3	WO 00/46347	8/10/00	WIPO			English
	B4	WO 00/52144	9/08/00	WIPO			English
	B5	WO 97/30667	8/28/97	WIPO			
	B6	WO 98/21938	5/28/98	WIPO			English
	B7	WO 98/32427	7/30/98	WIPO			English
	B8	WO 99/10514	3/04/99	WIPO			English

Other Art (Including Author, Title, Date Pertinent Pages, Etc.)

Exam. Init.	Ref. Des.	Citation
	C1	Abraham <i>et al.</i> , "Cystic fibrosis conductance regulator and adenosine triphosphate" <i>Science</i> , 275:1324-1326, 1997.

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	C2	Abraham <i>et al.</i> , "The multidrug resistance (mdr1) gene product functions as an ATP channel" <i>Proc. Natl. Acad. Sci.</i> , 90:312-316, 1993.
	C3	Abraham <i>et al.</i> , Proceedings of American Association of Cancer Research (abstract) #2575
	C4	Al-Awqati, "Regulation of ion channels by ABC transporters that secrete ATP" <i>Science</i> , 269:805-806, 1995.
	C5	Barros <i>et al.</i> , "Ectonucleotide diphosphohydrolase activities in entamoeba histolytica," <i>Arch. Biochem. Biophys.</i> , 375(2):304-314, 2000.
	C6	Bernatskaya <i>et al.</i> , "Effect of aluminum on respiration and activity of surface phosphatases of growing section of the pea root" <i>Fiziologiya i Biokhimiya Kul'turnykh Rastenii</i> , 1:25-29, 1976. In Russian with English abstract.
	C7	Boyum and Guidotti, "Effect of ATP binding cassette/multidrug resistance proteins on ATP efflux of <i>saccharomyces cerevisiae</i> " <i>Biochem. And Biophys. Res. Comm.</i> , 230:22-26, 1997.
	C8	CaPlus abstract AN:116522.
	C9	ChandraRajan <i>et al.</i> , "Determination of inorganic phosphorus in the presence of organic phosphorus and high concentrations of proteins," <i>Anal. Biochem.</i> , 72:407-412, 1976.
	C10	Chen <i>et al.</i> , "Inhibition of ecto-ATPase by PPADS, suramin and reactive blue in endothelial cells, C6 glioma cells and RAW 264.7 macrophages," <i>Br. J. Pharmacol.</i> , 119:1628-1634, 1996.
	C11	Crack <i>et al.</i> , "Pharmacological analysis of ecto-ATPase inhibition: evidence for combined enzyme inhibition and receptor antagonism in P2x-purinoceptor ligands," <i>Br. J. Pharmacol.</i> , 113(4):1432-1438, 1994.
	C12	Crack <i>et al.</i> , "Pharmacological and biochemical analysis of FPL 67156, a novel, selective inhibitor of ecto-ATPase," <i>Br. J. Pharmacol.</i> , 114(2):475-481, 1995.
	C13	Decottignies <i>et al.</i> , "ATPase and multidrug transport activities of the overexposed yeast ABC protein yor1p" <i>J. Biol. Chem.</i> , 273:12612-12622, 1998.
	C14	Dudler <i>et al.</i> , "Structure of an Mdr-like gene from arabidopsis thaliana: Evolutionary implications" <i>J. Biol. Chem.</i> , 267:5882-5888, 1992.
	C15	Gleeson <i>et al.</i> , "Ecto-ATPase/phosphatase activity in the olfactory sesnsilla of the spiny lobster, <i>Panulius argus</i> : Localization and characterization," <i>Cell Tiss. Res.</i> , 269:439-445, 1992.

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Exam. Init.	Ref. Des.	Citation
	C16	Grant <i>et al.</i> , "Overexposing of multidrug resistance-associated protein (MRP) increases resistance to natural product" <i>Drugs. Can Res.</i> 54:357-361, 1994.
	C17	Handa <i>et al.</i> , "Purification and cloning of a soluble ATP-diphosphohydrolase (Apyrase) from potato tubers (<i>solanum tuberosum</i>)" <i>Biochem. Biophys. Res. Comm.</i> , 218:916-923, 1996.
	C18	Hergenrother <i>et al.</i> , "Chromogenic assay for phospholipase D from <i>Streptomyces chromofuscus</i> : application to the evaluation of substrate analogs," <i>Lipids</i> , 32(7):783-788, 1997.
	C19	Hseih <i>et al.</i> , "Light-modulated abundance of an mRNA encoding a calmodulin-regulated chromatin-associated NTPase in Pea" <i>Plant Mol. Biol.</i> , 30:135-147, 1996.
	C20	Huang <i>et al.</i> , "Extracellular ATP stimulates increases in Na ⁺ /K ⁺ pump activity, intracellular pH and uridine uptake in cultures of mammalian cells", <i>Biochem. Biophys. Res. Commun.</i> , 182:836-843, 1992.
	C21	Katzmann <i>et al.</i> , "Expression of an ATP-binding cassette transporter-encoding gene (YOR1) is required for oligomycin resistance," <i>Molecular and Cellular Biology</i> , 15(12):6875-6883, 1995.
	C22	Kearney <i>et al.</i> , "Solid-phase synthesis of 2-aminothiazoles" <i>Org. Chem.</i> , 63:196-200, 1998.
	C23	Kiba <i>et al.</i> , "Specific inhibition of cell wall-bound ATPases by fungal suppressor from <i>Mycosphaerella pinodes</i> ," <i>Plant Cell Physiol.</i> , 36(5):809-817, 1995.
	C24	Kolacskowski <i>et al.</i> , "Anticancer drugs, ionophoric peptides, and steroids as substrates of the yeast multidrug transporter Pdr5p" <i>J. Biol. Chem.</i> , 271:31543-31588, 1996.
	C25	Komoszynski <i>et al.</i> , "Apyrases (ATP diphosphohydrolases, EC 3.6.1.5): function and relationship to ATPases" <i>Biochimica et Biophysica Acta</i> , 1310:233-241, 1996.
	C26	Kondejewski <i>et al.</i> , "Gramicidin S is active against both gram-positive and gram-negative bacteria," <i>Int J Peptide Protein Res.</i> , 47:460-466, 1996.
	C27	Ledoux <i>et al.</i> , "Overexpression of ecto-5'-nucleotidase promotes P-glycoprotein expression in renal epithelial cells," <i>Kidney International</i> , 52:953-961, 1997.
	C28	Lu <i>et al.</i> , "AtMRP2, an arabidopsis ATP binding cassette transporter able to transport glutathione S-conjugates and chlorophyll catabolites: functional comparisons with AtMRP1," <i>Plant Cell</i> , 10:267-282, 1998.
	C29	Manuel <i>et al.</i> , "Antimicrobial activity of chlorpromazine," <i>J Pharm Clin</i> , 14:289-292, 1995 (English summary).

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	C30	McCabe <i>et al.</i> , "Stable transformation of soybean (glycine max) by particle acceleration" <i>Biotechnol.</i> , 6:923-926
	C31	Medina <i>et al.</i> , <i>Biorg. Med. Chem. Lett.</i> , 8:2653-2656, 1998.
	C32	Meghji <i>et al.</i> , "Inhibition of extracellular ATP degradation in endothelial cells," <i>Life Sci.</i> , 57:763-771, 1995.
	C33	Meyers, "Transport Proteins" <i>Ency. Molec. Biol. Molec. Med.</i> , 6:125-133, 1997.
	C34	Munoz-Bellido <i>et al.</i> , "Antimicrobial activity of psychotropic drugs selective serotonin reuptake inhibitors," <i>International Journal of Antimicrobial Agents</i> , 14:177-180, 2000.
	C35	Okada <i>et al.</i> , "Diethyl pyrocarbonate is an inhibitor of cardiac, intestinal and renal ecto-ATPase," <i>Acta Histochem. Cytochem.</i> , 30(5&6): 637-642, 1997.
	C36	Pearson J. D., "Ectonucleotidases, measurement of activities and use of inhibitors," <i>Methods in Pharmacology</i> , Ed. David M. Paton, Plenum Press, Vol. 6, pp. 83-107, 1985.
	C37	Pietkiewicz <i>et al.</i> , "Increases in stably expressed ecto-5 nucleotidase precedes detection of Pgp in MDR variants of REH leukemia cells derived by selective pressure with incrementally increased concentrations of doxorubicin" <i>Proc. Amer. Assoc. Canc. Res.</i> , 39:1166.
	C38	Rengelshausen <i>et al.</i> , "Inhibition of porcine renal ecto-ATPase by Ca ²⁺ antagonists," <i>Eur. J. Physiol.</i> , 429(6), Suppl Abstract 177, 1995.
	C39	Sanchez-Fernandez <i>et al.</i> , "Cloning and expression analyses of AtMRP4, a novel MRP-like gene from arabidopsis thaliana" <i>Mol. Gen. Genet.</i> 258:655-662, 1998.
	C40	Schweibert, "CFTR regulates outwardly rectifying chloride channels through an autocrine mechanism involving ATP" <i>Cell</i> , 81:1063-1073, 1995.
	C41	Senior <i>et al.</i> , "The catalytic cycle of P-glycoprotein" <i>FEBS Letters</i> , 377:285-289, 1995.
	C42	Sidler <i>et al.</i> , "Involvement of an ABC transporter in a developmental pathway regulating hypocotyl cell elongation in the light," <i>Plant Cell</i> , 10:1623-1636, 1998.
	C43	Still <i>et al.</i> , "The inactivation by concanavalin A of the Ecto-ATPase and Ectoacetylcholinesterase of intact skeletal muscles," <i>Biochem. Cell Biol.</i> , 64:1272-80, 1986.
	C44	Thomas <i>et al.</i> , "A role for ectophosphatase in xenobiotic resistance", <i>The Plant Cell</i> , 12:519-533, 2000.

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Exam. Init.	Ref. Des.	Citation
	C45	Thomas <i>et al.</i> , "Apyrase functions in plant phosphate nutrition and mobilizes phosphate from extracellular ATP," <i>Plant Physiol.</i> , 119(2):543-551, 1999.
	C46	Thomas <i>et al.</i> , "Evaluating roles for apyrase in plant growth and development," <i>Annual Meetings of the American Society of Plant Physiologists and the Canad</i> , Number 150, Session 25, Vancouver, British Columbia, Canada, August 2-6, 1997.
	C47	Thomas <i>et al.</i> , "Plant metabolism of extracellular ATP: mechanism and implications," <i>Annual Meeting of the American Society of Plant Physiologists combined with the 9th International Co</i> , Madison, WI, Session No. 45 (abstract) #649, 1998.
	C48	Tikhaya <i>et al.</i> , "Ecto-ATPase (nucleotidase) in vitro activity in sterile isolated roots," <i>Fiziologiya Rastenii</i> , Moscow (in Russian), Vol. 42, pp. 821-827, 1995.
	C49	Tommasini <i>et al.</i> , "Differential expression of genes coding for ABC transporters after treatment of <i>Arabidopsis thaliana</i> with xenobiotics," <i>FEBS Letters</i> , 411:206-210, 1997.
	C50	Ujhazy <i>et al.</i> , "Evidence for the involvement of ecto-5 nucleotidase (CD73) in drug resistance", <i>Int. J. Cancer</i> , 68:493-500, 1996.
	C51	Ujhazy <i>et al.</i> , "Ecto-5 nucleotide (CD73) in multidrug-resistant cell lines generated by doxorubicin", <i>Int. Cancer</i> , 59:83-93, 1994.
	C52	Valenzuela <i>et al.</i> , "Comparative subcellar distribution of apyrase from animal and plant sources. Characterization of microsomal apyrase," <i>Comp. Biochem. Physiol., B:Comp. Biochem.</i> , 93B:911-919, <i>Chem. Absrt.</i> , 111:210870, 1989.
	C53	van Veen <i>et al.</i> , "Multidrug resistance mediated by a bacterial homolog of the human multidrug transporter MDR1," <i>Proc. Natl. Acad. Sci., USA</i> , 93:10668-10672, 1996.
	C54	Van Veen <i>et al.</i> , "Multidrug resistance mediated by a bacterial homolog of the human multidrug transporter MDR1", 1998.
	C55	Viola <i>et al.</i> , "Identification of an enzyme in protein extracts of potato (<i>Solanum Tuberosum</i> L.) tubers which interfere with the assay of fructokinase and other enzymes requiring phosphorylated nucleosides," <i>Plant Sci.</i> , 132:127-137, 1998.
	C56	Wadkins and Roepe, "Biophysical aspects of P-glycoprotein mediated multidrug resistance" <i>International Review of Cytology</i> , 171:121-165, 1997.

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	C57	Wang and Guidotti, "CD39 is an ecto-(Ca ²⁺ , Mg ²⁺)-apyrase," <i>J. Biol. Chem.</i> , 271(17):9898-9901, 1996.
	C58	Wiener <i>et al.</i> , "Na ⁺ /H ⁺ Exchange in ehrlich ascites tumor cells", <i>J. Biol. Chem.</i> , 261:4529-4534, 1986.
	C59	Windsor <i>et al.</i> , "Multiherbicide tolerance conferred by AtPgp1 and apyrase overexpression in <i>Arabidopsis thaliana</i> ," <i>Nature Biotechnology</i> , 21:428-433, 2003.
	C60	Yegutkin <i>et al.</i> , "Steady-state binding of [3H]-ATP to rat liver plasma membranes and competition by various purinergic agonists and antagonists," <i>Biochim. Biophys. Acta</i> , 1373(1):227-236, 1998.
	C61	Zhang <i>et al.</i> , "Interactions of bacterial cationic peptide antibiotics with outer and cytoplasmic membranes of <i>Pseudomonas aeruginosa</i> ," <i>Antimicrobial Agents and Chemotherapy</i> , 44(12):3317-3321, 2000.
	C62	Zielinski <i>et al.</i> , "calmodulin and calmodulin-binding proteins in plants" <i>Plant Physiol. Plant Mol. Biol.</i> 49:697-725, 1998.

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